

FINAL REPORT
MAY 1995

REPORT NO. 93-19

DOUBLE SECONDARY STEEL
CONTAINERS (SSCs) FOR
STORAGE OF LEAKING
M55 CHEMICAL ROCKETS

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VALIDATION ENGINEERING DIVISION
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<p>The U.S. Army Defense Ammunition Center and School (USADACS), Validation Engineering Division (SMCAC-DEV), was tasked by U.S. Army Armament, Munitions and Chemical Command (AMCCOM) to perform leak integrity tests on two SSCs joined together. These tests were conducted following modification of the SSC flanges so the two units could be joined together. These modified SSCs will be used as a second overpack for leaking M55 chemical rockets. This report contains results of the tests conducted.</p>				
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U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL
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REPORT NO. 93-19

DOUBLE SECONDARY STEEL CONTAINERS (SSCs) FOR STORAGE OF
LEAKING M55 CHEMICAL ROCKETS

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PART 1

INTRODUCTION

A. BACKGROUND. The U.S. Army Defense Ammunition Center and School (USADACS), Validation Engineering Division (SMCAC-DEV), was tasked by U.S. Army Armament, Munitions and Chemical Command (AMCCOM) to perform leak integrity tests on two SSCs joined together. These tests were conducted following modification of the SSC flanges so the two units could be joined together. This approach was taken so multiple M55 rockets could be overpacked at one time versus the current procedure of Single Round Containers (SRCs) for each rocket. This container will not be used to overpack M55 rockets that are not already in a first overpack.

B. AUTHORITY. This program was conducted IAW mission responsibilities delegated by the U.S. Army Armament, Munitions and Chemical Command (AMCCOM), Rock Island, IL.

C. OBJECTIVE. The objective of these tests was to verify that the SSCs, following modification, could still maintain their leak integrity and be used as chemical storage overpack containers.

D. CONCLUSION. All modified double SSCs had no detectable leaks in the 1×10^{-6} cc/he/sec/1.5 psi leak rate ranges with the exception of three containers (serial numbers 3117, 2544, and 3437), which had leak rates of 4×10^{-6} cc/he/sec/1.5 psi, 2×10^{-6} cc/he/sec/1.5 psi, and 2×10^{-6} cc/he/sec/1.5 psi, respectively. The maximum sensitivity of the tests conducted was 1×10^{-6} cc/he/sec/1.5 psi. All containers passed leak rate requirements for depot chemical storage containers.

PART 2

30 NOVEMBER - 1 DECEMBER 1994

ATTENDEES

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PART 3

TEST PROCEDURE

Helium-leak tests were performed at 1.5 ± 0.5 psi with the use of a mass spectrometer and a sampling probe (referred to as the helium quick test). This test method has a maximum sensitivity of 1×10^{-6} cc/he/sec/1.5psi and was used due to the large physical size of the items being tested.

PART 4

TEST ITEM

Two SSCs Joined Together

- a. Height: 48.0 inches
- b. Width: 33.3 inches
- c. Length: 84.5 inches
- d. Gasket: butyl rubber
- e. Torque on Flange Bolts: 30 ft-lbs.
- f. Total Tested: 63 double SSCs

PART 5

TEST RESULTS

A total of 63 double SSCs joined together were tested following modification. With the exception of three SSCs joined together (serial numbers 3117, 2544, and 3437), all containers had no detectable leaks. The three SSCs that did leak had leak rates of 4×10^{-6} cc/he/sec/1.5 psi, 2×10^{-6} cc/he/sec/1.5 psi, and 2×10^{-6} cc/he/sec/1.5 psi, respectively. It should be noted that the maximum sensitivity of the tests conducted was 1×10^{-6} cc/he/sec/1.5 psi; therefore, the true leak rate for all but the three containers listed above is not known. Table 1 below lists the serial number and leak rate for each container.

Table 1
Helium Leak Tests
Double SSC's

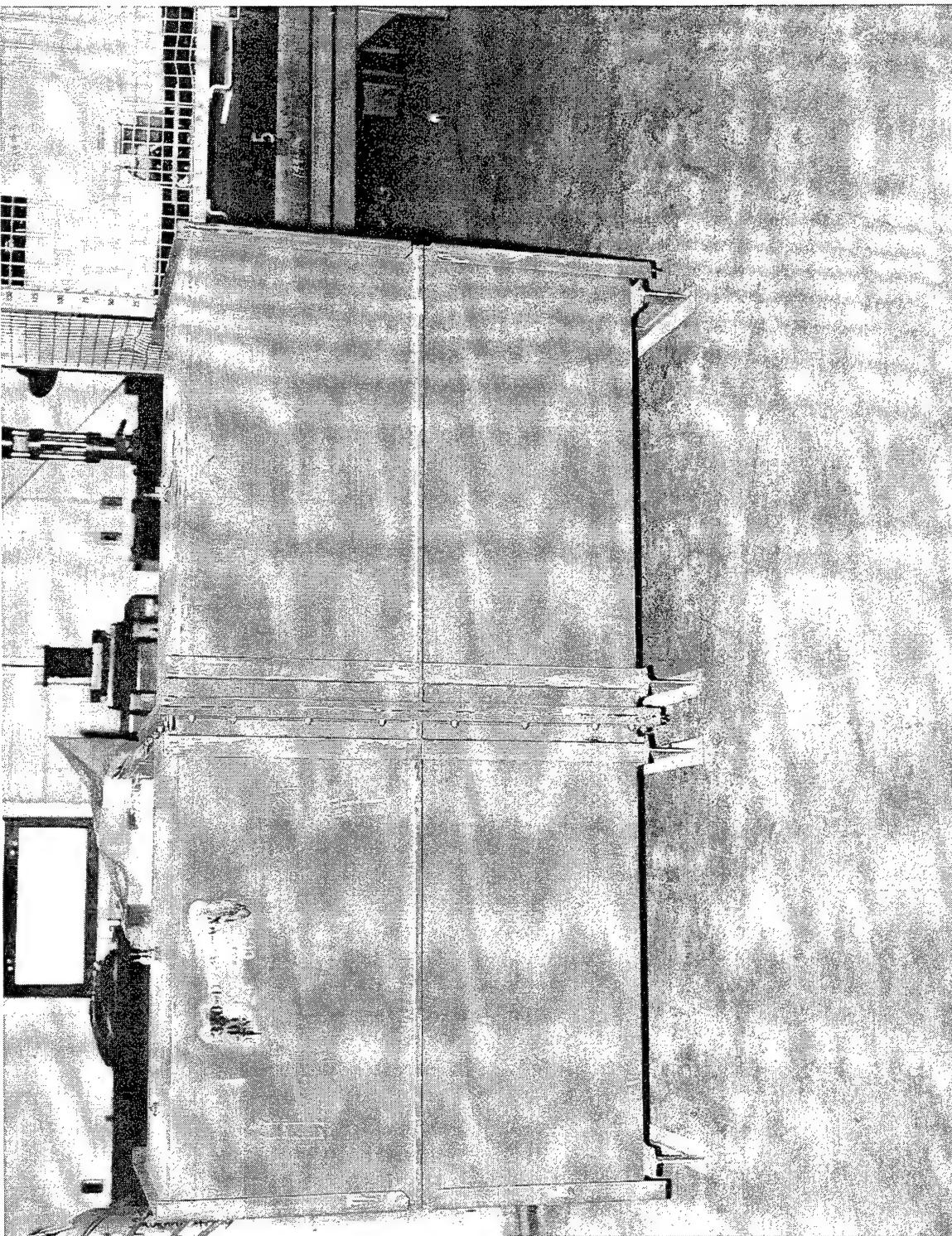
<u>SSC</u> <u>Serial Number</u>	<u>Leak Rate</u> <u>cc/he/sec/1.5psi</u>
0099	$<1 \times 10^{-6}$
0176	$<1 \times 10^{-6}$
0195	$<1 \times 10^{-6}$
0217	$<1 \times 10^{-6}$
0224	$<1 \times 10^{-6}$
0283	$<1 \times 10^{-6}$
0309	$<1 \times 10^{-6}$
0571	$<1 \times 10^{-6}$
0000	$<1 \times 10^{-6}$
0581	$<1 \times 10^{-6}$
0683	$<1 \times 10^{-6}$

<u>SSC</u>	<u>Leak Rate</u>
<u>Serial Number</u>	<u>cc/he/sec/1.5psi</u>
0810	<1 X 10 ⁻⁶
0816	<1 X 10 ⁻⁶
0823	<1 X 10 ⁻⁶
0859	<1 X 10 ⁻⁶
1022	<1 X 10 ⁻⁶
1229	<1 X 10 ⁻⁶
1300	<1 X 10 ⁻⁶
1306	<1 X 10 ⁻⁶
1330	<1 X 10 ⁻⁶
1421	<1 X 10 ⁻⁶
1440	<1 X 10 ⁻⁶
1498	<1 X 10 ⁻⁶
1500	<1 X 10 ⁻⁶
1510	<1 X 10 ⁻⁶
1525	<1 X 10 ⁻⁶
1687	<1 X 10 ⁻⁶
1702	<1 X 10 ⁻⁶
1731	<1 X 10 ⁻⁶
1746	<1 X 10 ⁻⁶
1850	<1 X 10 ⁻⁶
1963	<1 X 10 ⁻⁶
1999	<1 X 10 ⁻⁶
2379	<1 X 10 ⁻⁶
2544	2 X 10 ⁻⁶
2571	<1 X 10 ⁻⁶
2583	<1 X 10 ⁻⁶
0000	<1 X 10 ⁻⁶

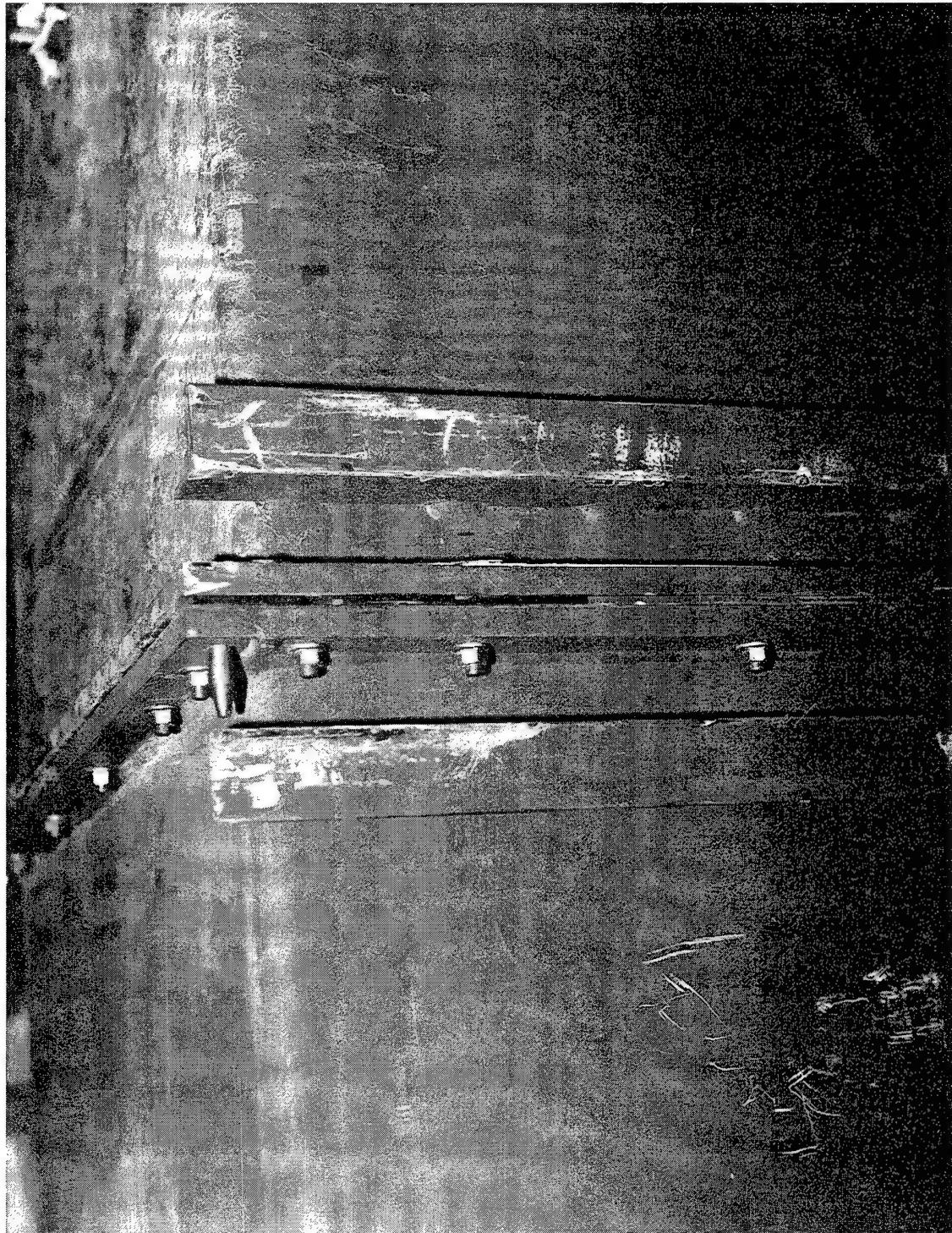
<u>SSC</u>	<u>Leak Rate</u>
<u>Serial Number</u>	<u>cc/he/sec/1.5psi</u>
2587	<1 X 10 ⁻⁶
2595	<1 X 10 ⁻⁶
2612	<1 X 10 ⁻⁶
2690	<1 X 10 ⁻⁶
2718	<1 X 10 ⁻⁶
2745	<1 X 10 ⁻⁶
2746	<1 X 10 ⁻⁶
2749	<1 X 10 ⁻⁶
2993	<1 X 10 ⁻⁶
0000	<1 X 10 ⁻⁶
2821	<1 X 10 ⁻⁶
2830	<1 X 10 ⁻⁶
2918	<1 X 10 ⁻⁶
3037	<1 X 10 ⁻⁶
3063	<1 X 10 ⁻⁶
3068	<1 X 10 ⁻⁶
3117	4 X 10 ⁻⁶
3135	<1 X 10 ⁻⁶
0000	<1 X 10 ⁻⁶
3215	<1 X 10 ⁻⁶
3270	<1 X 10 ⁻⁶
3423	<1 X 10 ⁻⁶
3437	2 X 10 ⁻⁶
4070	<1 X 10 ⁻⁶
4095	<1 X 10 ⁻⁶
6060	<1 X 10 ⁻⁶

PART 6

PHOTOGRAPHS



	U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL -	
	SAVANNA, IL	
PHOTO NO. SCN95-122-1296: This photo shows the side view of a double SSC.		



U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL -
SAVANNA, IL

PHOTO NO. SCN95-122-1297: This photo is a close up of the top flange and corner. Note guide pin for aligning SSC flanges during the joining process.

PART 7

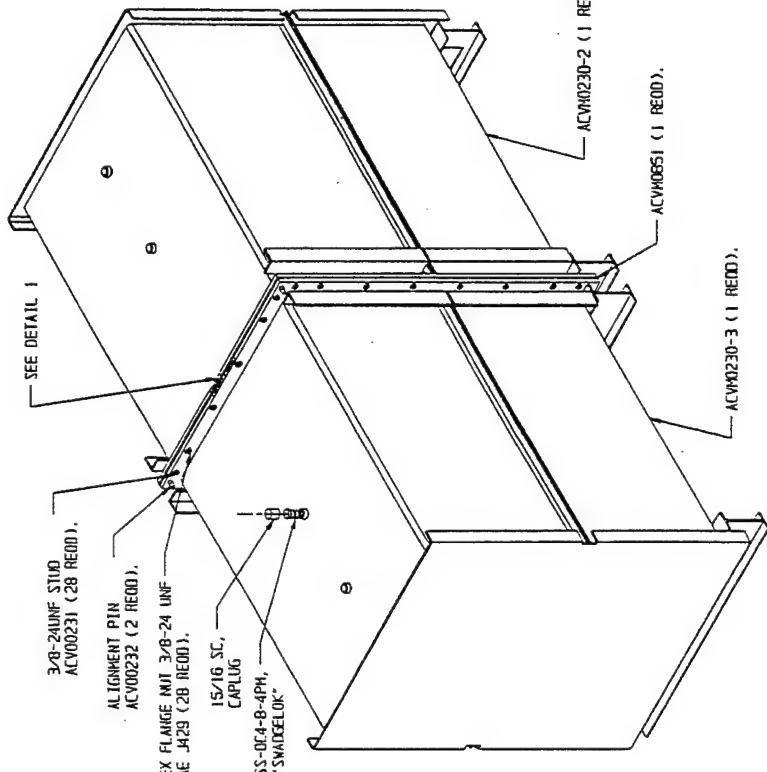
DRAWINGS

REV	DESCRIPTION	DATE	APPROVED
LIA	RELEASED FOR PRODUCTION	94-03-04	SPRATIE
XA	REVISED NOTE 7	94-03-06	

NOTES:

1. THE COUPLED ASSEMBLY OF SECONDARY STEEL CONTAINERS (SSC) USES TWO MOVED SSC BODIES. DOORS ARE DISCARDED, ONE GASKET WILL BE INSPECTED AND RETAINED FOR THE COUPLED SSC AND THE SECOND GASKET WILL BE RETAINED FOR FUTURE USE. THE ORIGINAL 3/P-2461 BOX IS DISCARDED.

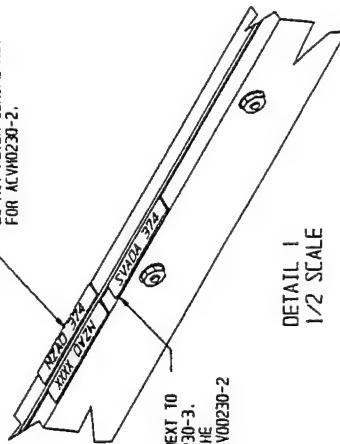
2. REFER TO APPROPRIATE DRAWING FOR LOADING OF TOXIC CHEMICAL CONTAINERS INTO THE UNCOUPLED CONTAINERS.
 3. PLACE THE TWO HALVES TO BE ASSEMBLED ON FLOOR PLATE, PART NO ACV00234-1 OR SIMILAR. THIS HELPS TO ALIGN THE TWO HALVES OVER THE TWO ALIGNING PINS IN ROUGH FLOOR ENVIRONMENTS AND REDUCES SLIDING FRICTION DURING ASSEMBLY. RECOMMEND A 9/16 INCH STANDARD RATCHET BOX WRENCH TO BE USED TO INITIALLY SUGG UP THE NUTS (MACHINIST-LARR PART NO 5461A33).
 4. SUGG UP THE NUTS AT THE FLANGE TOP, 2 SIDES AND UNDERNEATH AS REACHABLE. LIFT THE COUPLED CONTAINERS FROM THE SIDE BY FORKLIFT CENTERED ON THE FLANGE AREA, FOR 2 TIMES AT MAXIMUM SPREAD, PLACE SAFETY STAND, PART NO ACW00236-1 UNDER THE CONTAINERS. RECOMMEND USING A 9/16 INCH RATCHET BOX CROW FOOT WRENCH; 1/2 INCH DRIVE, PART NO ACV00237-1 ASSEMBLED TO A 1/2 DRIVE TORQUE WRENCH FOR THE FOLLOWING TORQUE OPERATIONS. STARTING AT THE LOWER LEFT CORNER AND MOVING CLOCKWISE, TORME EVERY NUT TO 300 INCH-POUNDS. UPON COMPLETING THE TORQUE SEQUENCE (28 NUTS), REPEAT THE 300 INCH-POUND TORQUE SEQUENCE A SECOND TIME.
 5. THE CONTAINER SHALL BE EXAMINED AND TESTED IN ACCORDANCE WITH DNG ACV00233. METNO 1.
 6. ALL EXTERIOR PAINTED SURFACES SHALL BE TOUCH-UP PAINTED IN ACCORDANCE WITH DNG AC200000423. MASK SNAGGLEK PRIOR TO PAINTING. AFTER PAINTING, REMOVE MASKING TAPE AND INSTALL CAPSUS.
 7. INFERIOR SURFACES SHALL BE FREE OF OIL OR DIRT.
 8. FOR SERIAL NUMBER MARKING REQUIREMENTS, SEE DETAIL 1.



TACK YELD PART NO. ACY023D-4 NEXT 10
NZAD SERIAL NO. PLATE ON ACY023D-3.
PART NO. ACY023D-4 IS TO USE THE
SAME NUMERIC NUMBER FOUND ON ACY023D-2
FOR A MATCHED SET.

卷之三

DETAIL 1
1/2 SCALE



DISTRIBUTION STATEMENT A. UNLIMITED

REVISION	DESCRIPTION	DATE	APPROVED
	- RELEASED FOR PRODUCTION X CHANGE DRILL HOLE TO .33/.64"	94-03-04	SPRAGUE
	X	94-03-16	

NOTES:

- ADD A 1/2 INCH DRILL HOLE AT EACH TOP CORNER FOR ALIGNMENT PIN. LOCATION IS BY GEOMETRIC TOLERANCE IN MILLIMETERS.
- PART NO ACVM0232. LOCATION IS BY GEOMETRIC TOLERANCE. SEE DRAWING ACVM0845, SHEET 1 OF 3, FOR ADDITIONAL GEOMETRIC TOLERANCE.
- SEE DRAWING ACVM0845, SHEET 1 OF 3, FOR ADDITIONAL PRODUCTION HOLEs WERE DRILLED AND TAPEd INTO INDIVIDUAL STEEL STRIPS BEFORE WELDING SHOWN AT SHEET 2 OF 3.
- SEE DETAIL 1, DNG ACVM0230, SHEET 1 OF 4, FOR MARKING OF COUPLED CONTAINERS. DURING MODIFICATION, ALL MATCHED CONTAINERS ARE TO BE TRIAL ASSEMBLED TO INSURE ALIGNMENT OF ALL HOLES WITH STUDS AND ALIGNMENT PINS.
- THE ORIGINAL WELD ON THE BACK SIDE OF THE FLANGE MAY EXCEED INTO THE SEAT AREA OF THE FLANGED NUT. THE NUT FLANGE DIAMETER IS ESTIMATED AT .82 INCHES. ALL HOLES MUST BE CHECKED FOR INTERFERENCE. IF INTERFERENCE EXIST, USE SPOTTING TOOL TO REMOVE INTERFERING WELD (CLEAN-UP).
- THE "SWAGELOK" SHOULD BE CAPPED WITH A CAPLUG, PART NO 15/16 SC, IF MISSING.

SEE NOTE 5

SEE NOTE 4

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1060 MIN 1070 MAX 1.0.

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SEE NOTE 623

SEE NOTE 624

SEE NOTE 625

SEE NOTE 626

SEE NOTE 627

SEE NOTE 628

SEE NOTE 629

SEE NOTE 630

SEE NOTE 631

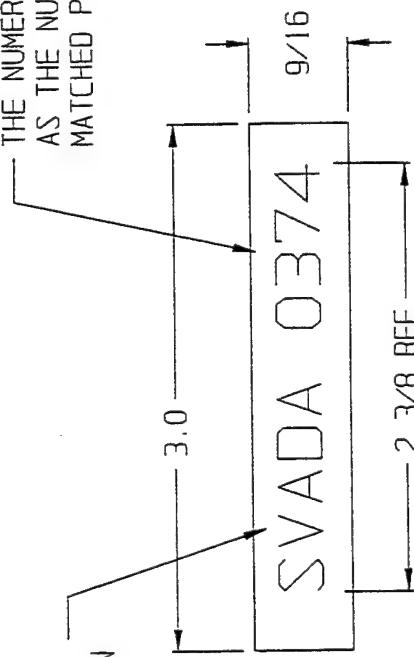
SEE NOTE 632

REVISION				APPROVED
LTR	DESCRIPTION	DATE		
-	RELEASED FOR PRODUCTION	94-03-04		SPRAGUE

- NOTES:
1. MATERIAL: 12 GA (.1046) HOT OR COLD ROLLED SHEET STEEL.
 2. SERIAL NUMBER "SVADA XXXX" SHALL BE APPLIED BY METAL STAMP
1/4 INCH HIGH TO A DEPTH THAT WILL BE LEGIBLE AFTER PAINTING.

INDICATES THE DEPOT
DOING THE MODIFICATION

THE NUMERIC NUMBER TO BE THE SAME
AS THE NUMBER APPEARING ON
MATCHED PART NO ACVM0230-2



PART NO ACVM0230-4

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. SHARP CORNERS AND EDGES.			BREAK	DATE	94-01-10	DESIGN ACTIVITY	U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND DEFENSE AMMUNITION CENTER AND SCHOOL SAVANNA, ILLINOIS 61074-9639
DEPTN	CHECKER	PROJ ENGR					
DIW	JMK	THOMAS J MICHELS <small>CHIEF, SUPPLY ENGINEERING DIV</small>	SPRAGUE			SECONDARY STEEL CONTAINER, COUPLED	
FRACTION	+						
DECIMALS	+						
ANGLES	+						
MATERIAL							
ACVM0230-3							
NEXT ASSY	USED ON						
APPLICATION							

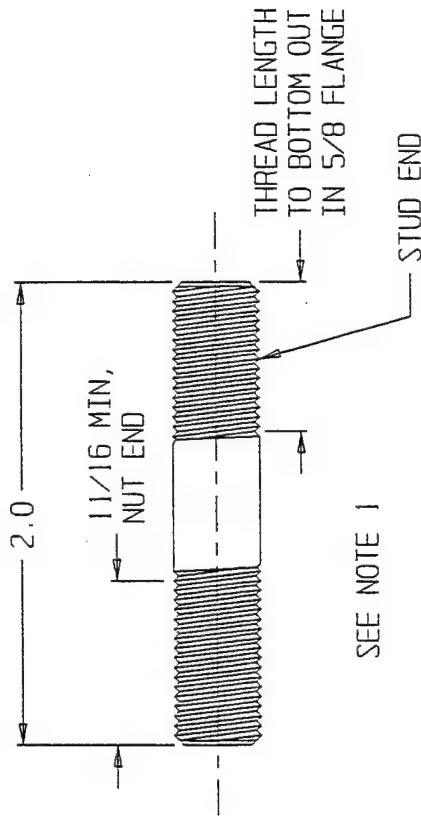
DISTRIBUTION STATEMENT A,
UNLIMITED

SIZE	CAGE CODE	ACVM0230	SHEET 4 OF 4
B	28620		

NOTES:

1. 3/8-24 UNF X 2 INCH LENGTH, RIGHT HAND THREAD LENGTHS AS SHOWN, GRADE 8 (150,000 PSI MINIMUM TENSILE STRENGTH), PER SAE J429, CADMIUM PLATED PER QQ-P-416, TYPE II CLASS 2 THREAD.

REVISION		APPROVED	
LTR	DESCRIPTION	DATE	
-	RELEASED FOR PRODUCTION	94-03-04	SPRAGUE
XA	CORRECT SPELLING ERROR	94-03-08	



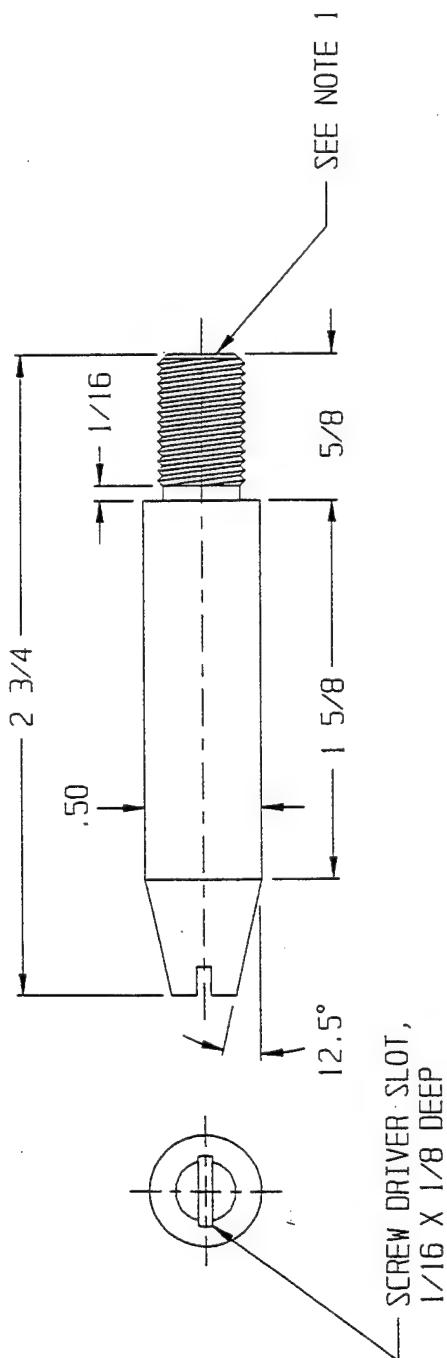
PART NO ACV00231-1

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. SHARP CORNERS AND EDGES. TOLERANCES ON				DATE	DESIGN ACTIVITY		
FRACTIONS	DECIMALS	ANGLES	INCHES	94-01-10	OFFICE	CHECKER	PROJ ENGR
1/16	0.0625		1/16	DIW	JMK CHIEF SPEAK-DEV	THOMAS J MICHELS SUPPLY ENGINEERING DIV	SPRAGUE
						WILLIAM F ERNST SUBMITTED CHIEF, LOGISTICS ENGINEERING OFFICE APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIAL COMMAND (AMC)	
							ACV00231
							B 28620
							U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL
							SHEET 1 OF 1

DISTRIBUTION STATEMENT A,
UNLIMITED

- NOTES:
1. 3/8-24 UNF, RIGHT HAND THREAD.
 2. MATERIAL: 1045, MEDIUM CARBON, COLD FINISH ROUND BAR STOCK.

REVISION	
LTR	DESCRIPTION
-	RELEASED FOR PRODUCTION
XA	CORRECT SPELLING ERRORS
XB	CHANGED DIAMETER TO .50



PART NO ACV00232-1

DESIGN ACTIVITY			
U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND DEFENSE AMMUNITION CENTER AND SCHOOL SAVANNA, ILLINOIS 61074-0639			
DATE	94-01-10	PROJ. ENGR	SPRAGUE
OFFICER	DIW	CHECKER	
SMAC-C-DEV		JHK	THOMAS J MICHAEL S
DECIMALS	.11/16	CHIEF, SUPPLY ENGINEERING DIV	
ANGLES	.005	STANTEED	WILLIAM F ERNST
		CHIEF, LOGISTICS ENGINEERING OFFICE	
		APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY AMMUNITION CENTER AND SCHOOL	
ACVM0230-2			
NEXT ASSY	USED ON		
DISTRIBUTION STATEMENT A, UNLIMITED	APPLICATION		

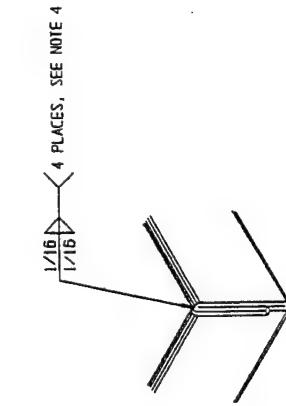
SIZE	CAGE CODE	ACV00232	SHEET 1 OF 1
B	28620		

TEST METHOD I		REVISION L/M - RELEASED FOR PRODUCTION X/A REVISE NOTE 3, NFM100 11	DATE 94-03-04 APPROVED SPRAGUE 94-03-08
TEST METHOD II			
<p>1. COMPLETE THE APPROPRIATE TORQUE SEQUENCE FOR THE CONTAINER.</p> <p>2. CONNECT HELIUM SOURCE TO SWAGELOCK, IF INSTALLED, OR INSTALL SCHRAEDER VALVE TO MAKE THE CONNECTION.</p> <p>3. PRESSURE CONTAINER TO 5 ± 1 PSI WITH HELIUM.</p> <p>4. USE MASS SPECROMETER WITH QUICK TEST PROBE TO CHECK ALL WELDS, AND FLANGE JOINTS TO INCLUDE AREA AROUND BOLT STUDS. RECORDED LEAK RATE NOT TO EXCEED 1×10^4 CUBIC CENTIMETERS HELIUM PER 3 ATMOSPHERES PER SECOND (1×10^4 cc He./3Atm/Sec.) OR THE LEAK RATE REQUIREMENTS OF THE CONTAINER.</p> <p>5. CONTAINERS EXCEEDING THE LEAK RATE IN STEP 4 SHALL HAVE THE LEAK POINT(S) IDENTIFIED FOR REPAIR.</p> <p>6. AFTER REPAIR, CONTAINER WILL BE RE-TESTED IN ACCORDANCE WITH STEPS 1-4 ABOVE. THE HELIUM FROM THE PREVIOUS TEST MUST HAVE DISPERSED INTO THE SURROUNDING AIR BEFORE AN ACCURATE READING CAN BE OBTAINED ON ANY NEW TEST.</p> <p>7. IF A SCHRAEDER VALVE WAS INSTALLED: REMOVE SCHRAEDER VALVE AND INSTALL A PIPE PLUG IN ACCORDANCE WITH NOTE 1.</p>			
<p>1. COMPLETE THE APPROPRIATE TORQUE SEQUENCE FOR THE CONTAINER.</p> <p>2. CONNECT THE VACUUM PUMP INLET HOSE INTO A PLUG ON THE TEST SAMPLE.</p> <p>3. BLOCK THE TEST CONTAINER A FOOT OFF THE FLOOR WITH THE CONTAINER OVERHANGING THE BLOCKING.</p> <p>4. EVALUATE THE CONTAINER TO 0 ATMOSPHERE.</p> <p>5. COVER THE CONTAINER WITH PLASTIC SHEETING DRAPE ON ALL 4 SIDES AND HELD AT THE FLOOR LINE BY A ROPE OR OTHER SUITABLE MEANS TO FORM A COMPLETE INVERTED BAG. INSURE THE PLASTIC IS WITHOUT HOLES.</p> <p>6. ADMIT HELIUM INTO THE BAG AT THE BOTTOM UNTIL THE BAG STARTS TO EXPAND LIKE A BALLOON (TEST SPECIMEN SURROUNDED BY A HELIUM RICH ATMOSPHERE).</p> <p>7. MONITOR THE EXHAUST OF THE VACUUM PUMP WHICH HAS BEEN CONTINUOUSLY RUNNING SINCE STEP 4. THE RECORDED LEAK RATE IS NOT TO EXCEED 1×10^4 CUBIC CENTIMETERS HELIUM PER ATMOSPHERE PER SECOND (1×10^4 cc He./Atm/Sec.) OR THE LEAK RATE REQUIREMENTS OF THE CONTAINER. THE MONITORING TIME IS TO BE AT LEAST 5 MINUTES FROM THE END OF STEP 6.</p> <p>8. CONTAINERS EXCEEDING LEAK RATE AT STEP 7 WILL BE REMOVED FROM THE INVERTED PLASTIC BAG AND LEAK POINTS IDENTIFIED FOR REPAIR BY TEST METHOD I.</p> <p>9. AFTER REPAIR, THE CONTAINER WILL BE RE-TESTED IN ACCORDANCE WITH STEPS 1-7 ABOVE.</p> <p>10. REMOVE THE VACUUM HOSE FROM TEST SAMPLE AND INSTALL A PIPE PLUG IN ACCORDANCE WITH NOTE 1.</p>			
DISTRIBUTION STATEMENT A, UNLIMITED	NOTE ASY	USED ON	APPLICATION
ACV000233	D	2B620	UNIT 1
			SHEET 1 OF 1

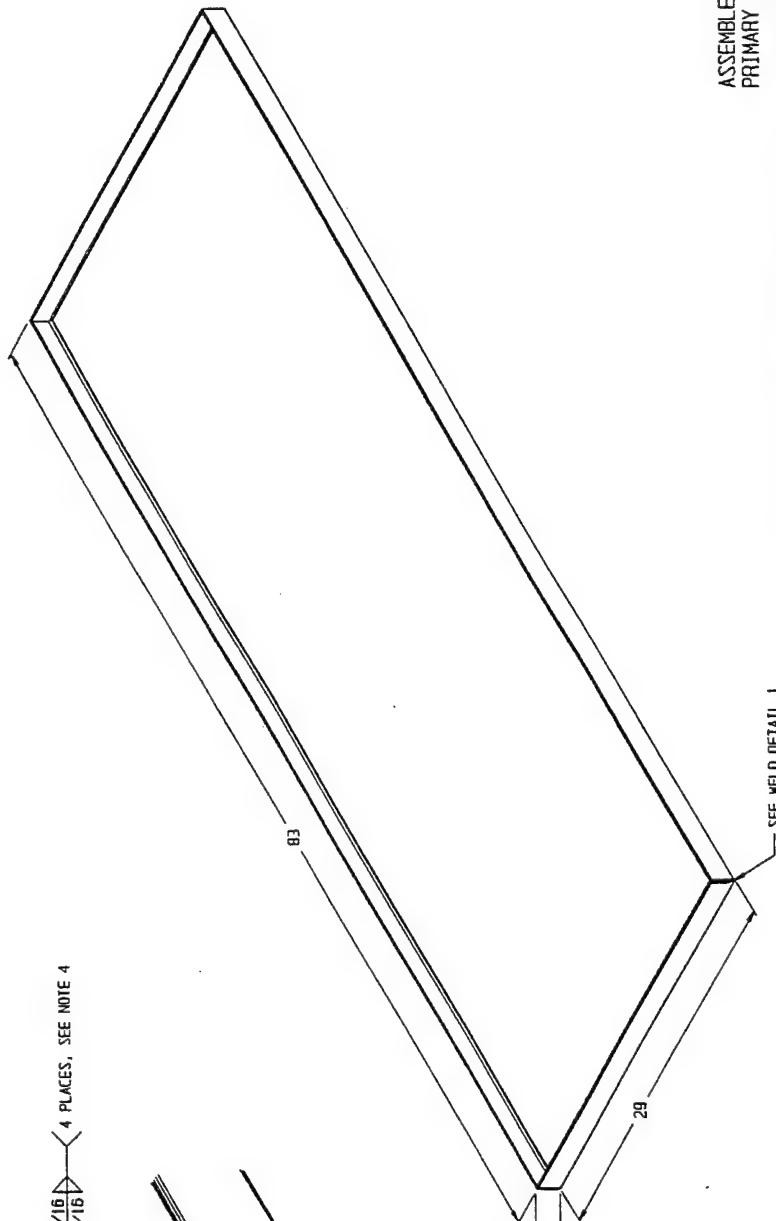
LIN	DESCRIPTION	REVISION	DATE	APPROVED
- RELEASED FOR PRODUCTION			94-03-04	SPRAGUE

- NOTES:
1. REFER TO APPROPRIATE DRAWING FOR USE OF PAN WITH TOXIC CHEMICAL MUNITIONS.
 2. REFERENCE DIMENSIONS ARE SHOWN. REFER TO SHEET 4 OF 4 FOR FINISHED TOLERANCES.
 3. SEE SHEET 2 OF 4 FOR FLAT DIMENSIONS AND FORMING.
 4. THE CORNERS ARE TO BE FULL WELDED AT ALL JUNCTIONS INSIDE AND OUT TO ACHIEVE "NO LEAKS" (WATER TEST).
 5. EITHER DESIGN FABRICATION IS ACCEPTABLE: SINGLE PIECE OR THREE PIECE.
 6. ESTIMATED WEIGHT OF THE PAN IS 67 POUNDS.

1/16
1/16



DETAIL 1
1 SCALE



ASSEMBLED PART NO ACV00235-1
PRIMARY DESIGN; SINGLE PIECE

DESIGN ACTIVITY	APPROVAL, MANUFACTURE, AND CHEMICAL COMPANY DEFENSE AMMUNITION CENTER AND SCHOOL, TINAWA, ILLINOIS 61084-1000
SPRAGUE	
PERFECT	
JAK	THOMAS J. HUGGENS
DET 1	DET 2
MURK	WILLIAM F. ERNST
	DET 3
	DET 4
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DESIGN ACTIVITY	APPROVAL, MANUFACTURE, AND CHEMICAL COMPANY DEFENSE AMMUNITION CENTER AND SCHOOL, TINAWA, ILLINOIS 61084-1000
SPRAGUE	
PERFECT	
JAK	THOMAS J. HUGGENS
DET 1	DET 2
MURK	WILLIAM F. ERNST
	DET 3
	DET 4
	DET 5
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NOTES:																							
<p>1. REFER TO APPROPRIATE DRAWING FOR USE OF PAN WITH TOXIC CHEMICAL MUNITIONS.</p> <p>2. REFERENCE DIMENSIONS ARE SHOWN. SEE SHEET 4 OF 4 FOR FINISHED TOLERANCES.</p> <p>3. ESTIMATED WEIGHT OF THE PAN IS 70 POUNDS.</p> <p>4. EITHER DESIGN FABRICATION IS ACCEPTABLE; SINGLE PIECE OR THREE PIECE.</p>																							
VIEW BEFORE WELDING																							
ASSEMBLED PART NO ACV00235-1 ALTERNATE DESIGN: 3 PIECE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">DESIGN ACTIVITY</td> </tr> <tr> <td colspan="2">U.S. ARMY CHEMICAL COMMAND ARMED FORCES AMMUNITION CENTER AND SCHOOL SAVANNA, ILLINOIS 61074-9200</td> </tr> <tr> <td colspan="2">DRAWN BY: J.K. THOMAS, J. HODGES MURKIN</td> </tr> <tr> <td colspan="2">APPROVED BY: WILLIAM F. ERNST WILLIAM F. ERNST</td> </tr> <tr> <td>SIZE</td> <td>DATE</td> </tr> <tr> <td>D</td> <td>28020</td> </tr> <tr> <td>SCALE</td> <td>1/4</td> </tr> <tr> <td colspan="2">ACV00235</td> </tr> <tr> <td colspan="2">SHEET 3 OF 4</td> </tr> </table>					DESIGN ACTIVITY		U.S. ARMY CHEMICAL COMMAND ARMED FORCES AMMUNITION CENTER AND SCHOOL SAVANNA, ILLINOIS 61074-9200		DRAWN BY: J.K. THOMAS, J. HODGES MURKIN		APPROVED BY: WILLIAM F. ERNST WILLIAM F. ERNST		SIZE	DATE	D	28020	SCALE	1/4	ACV00235		SHEET 3 OF 4	
DESIGN ACTIVITY																							
U.S. ARMY CHEMICAL COMMAND ARMED FORCES AMMUNITION CENTER AND SCHOOL SAVANNA, ILLINOIS 61074-9200																							
DRAWN BY: J.K. THOMAS, J. HODGES MURKIN																							
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SIZE	DATE																						
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SCALE	1/4																						
ACV00235																							
SHEET 3 OF 4																							
APPLICATION																							

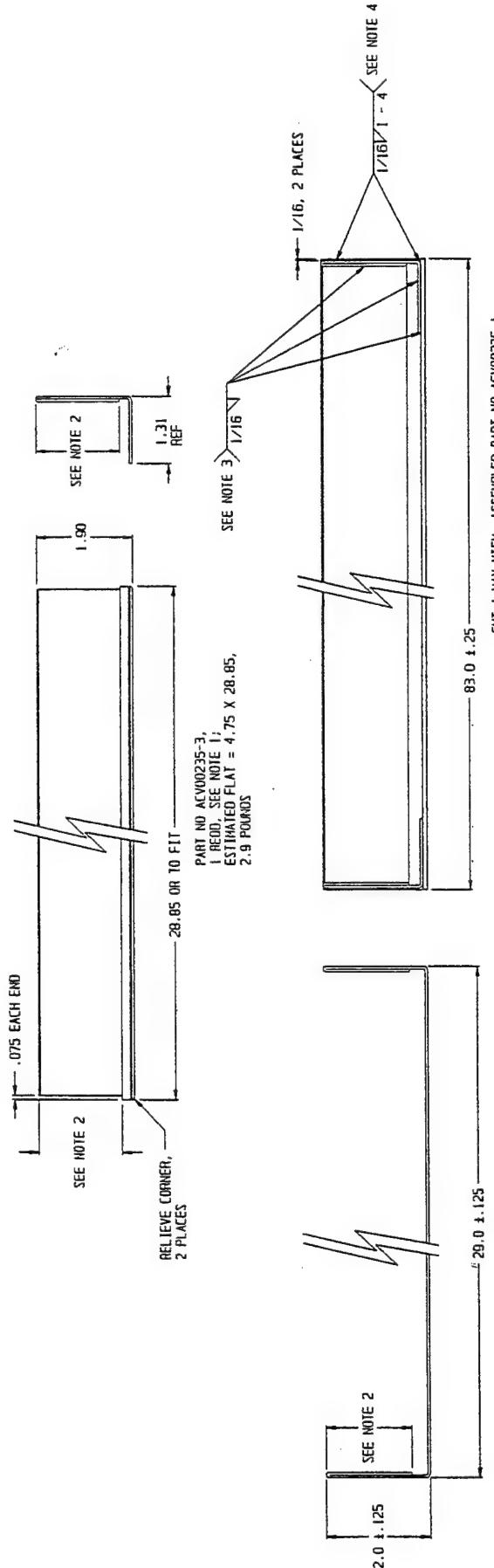
DISTRIBUTION STATEMENT A. UNLIMITED

ITEM	DESCRIPTION	REVISION	DATE	APPROVED
-	RELEASED FOR PRODUCTION		94-03-04	SPRAGUE

NOTES:

1. MATERIAL: 14 GA (.0747), 36 INCH WIDTH, ASTM-A366, LOW CARBON, COMMERCIAL QUALITY, COLO ROLLED SHEET STEEL.
2. SPANK THE FOUR TOP EDGES AS SHOWN. THE SPANNED DIMENSION IS THE RESULTANT MATERIAL LEFT AFTER FORMING PART NO ACW0235-2 FROM 36 INCH WIDTH SHEET (EVENLY DIVIDED). USE THE SAME SPANNED DIMENSION FOR PART NO ACW0235-3.
3. THE ENDS ARE TO BE FULL WELDED AT ALL JUNCTIONS ON THE INSIDE FOR NO LEAKS (WATER TEST).

TACK WELD JOINTS OUTSIDE

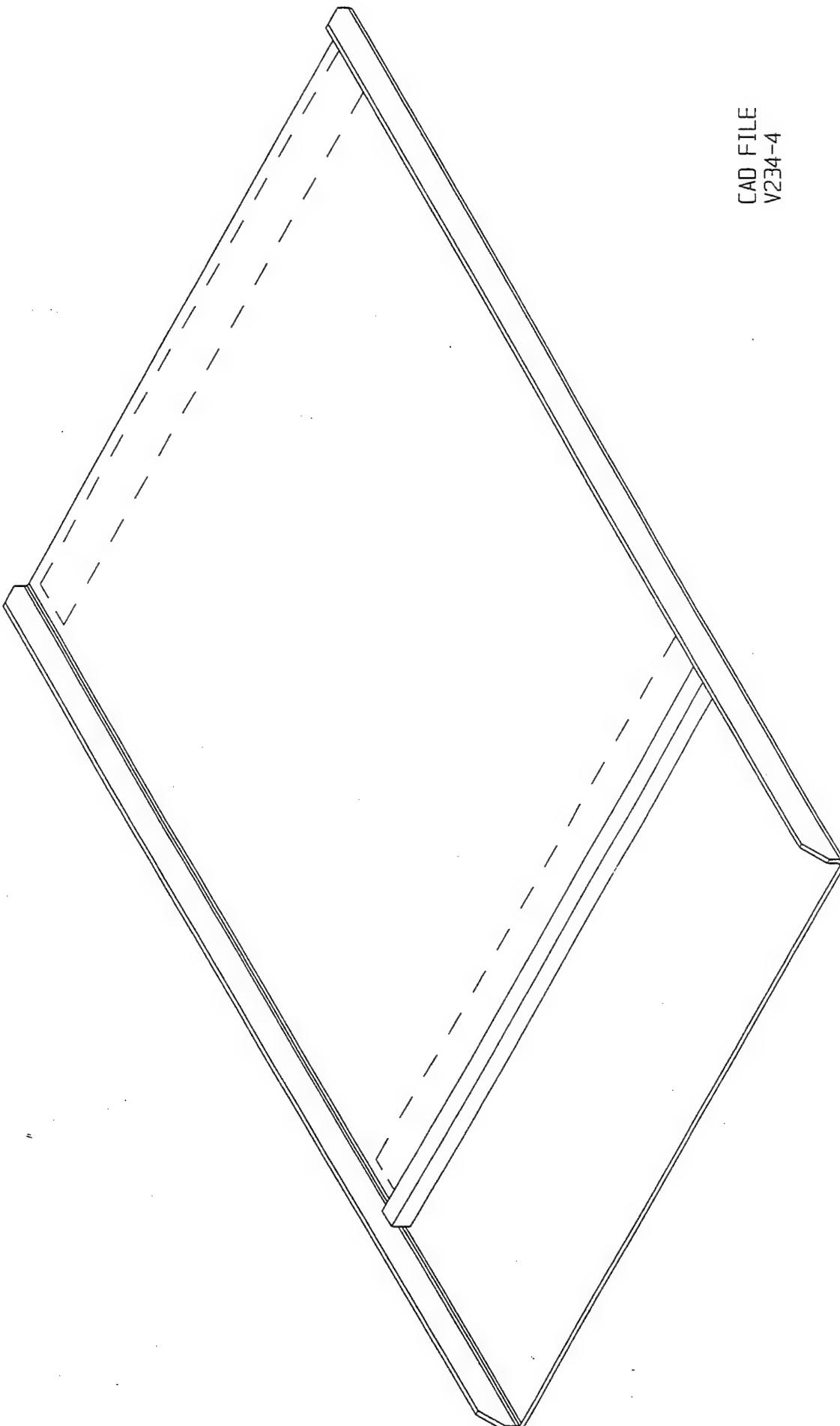


CUT-A-WAY VIEW, ASSEMBLED PART NO ACV00235-1

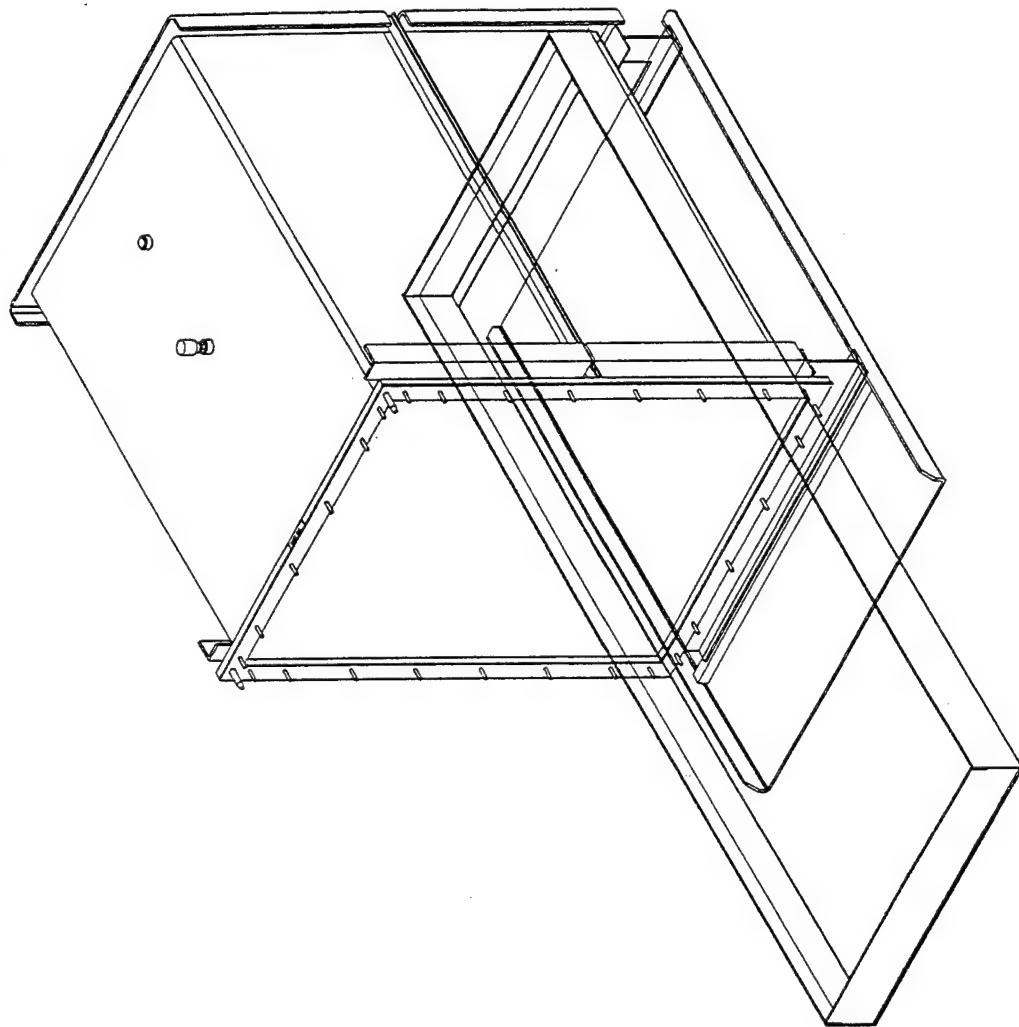
PART NO ACV00235-2,
1 RECD, SEE NOTE 1;
ESTIMATED FLAT = 36 X 83.

ASSEMBLED PART NO ACV00235-1
ALTERNATE DESIGN; 3 PIECE

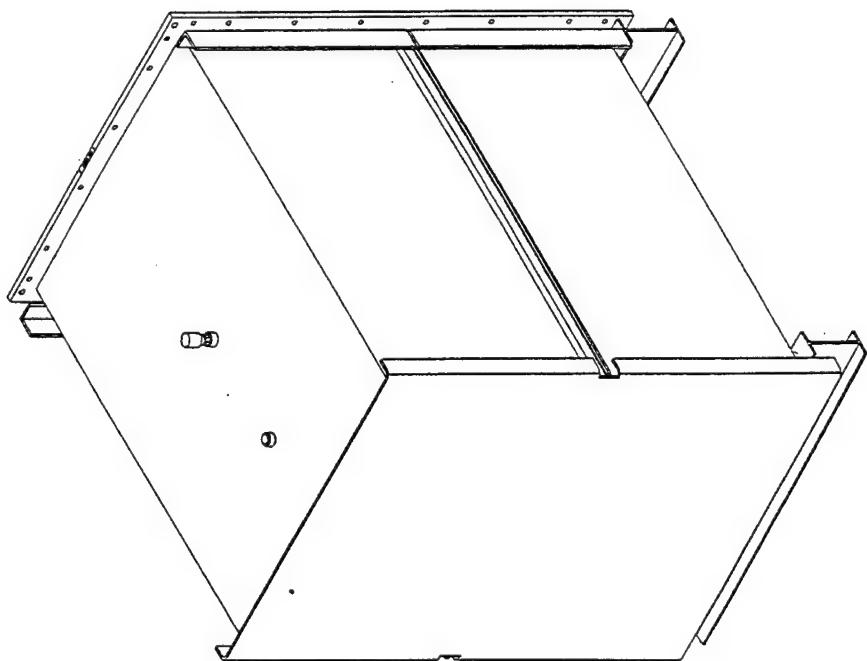
DISINTEGRATION STATEMENT ▲ IN TWITTER

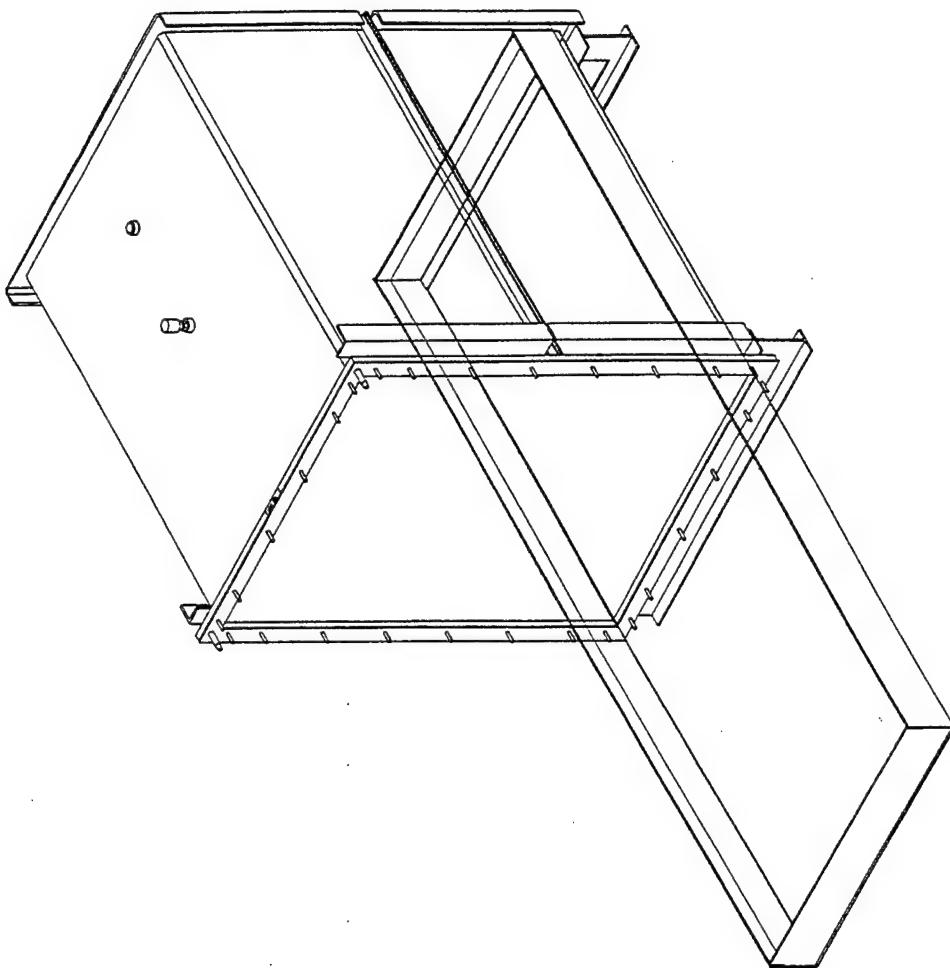


CAD FILE
V234-4

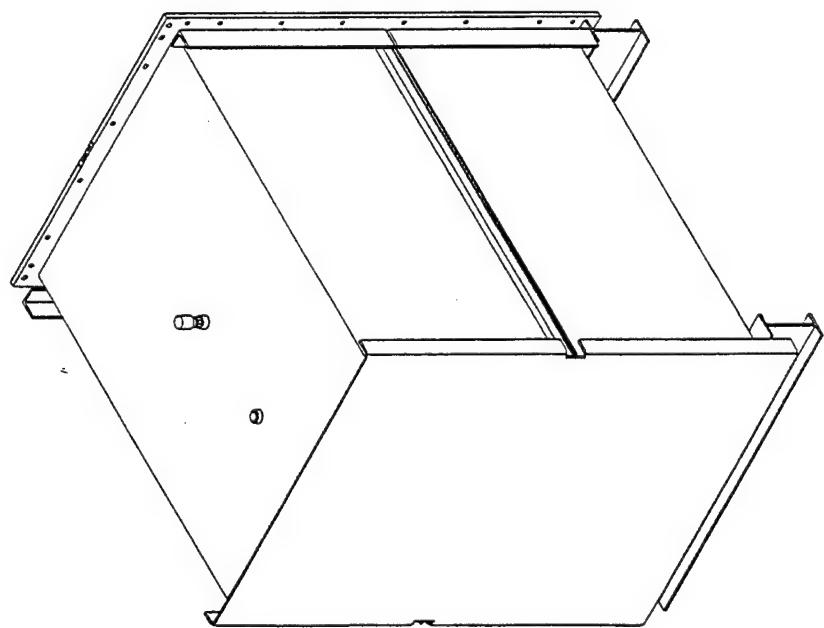


CAD FILE
\SSCRAIL-2.PRT





CAD FILE
\\SSCRAIL.PRT



LIN	DESCRIPTION	REVISION	DATE	APPROVED

NOTES:

1. A SAFETY STAND (2 STEEL SAW HORSES) IS USED TO SUPPORT THE COUPLED SSC CONTAINERS AFTER THE INITIAL SNUGGING OF THE NUTS AT TOP AND TWO SIDES OF THE FLANGE. THE STAND ALLOWS FOR A SAFE TORQUE SEQUENCE OF ALL NUTS. THE COUPLED CONTAINERS ARE PLACED ON THE SAFETY STAND BY A FORK LIFT TRUCK.

85.0 REF

62 REF

19.5 REF

42-3/4 REF

FORK LIFTS
SAFETY STAND,
PART NO ACV00234-2

CROSS SECTION OF SSC
BODY ON SAFETY STAND

CAD FILE
V234-2

PART NO. ACV00234-
SAFETY STAND USAGE

DESIGN ACTIVITY		U.S. ARMY LOGISTICS AND TECHNICAL COMMAND STANAGA, ILLINOIS 60179-9035	
Design	94-02-08	Manufacturing	None
Engineering	None	Testing	None
Procurement	None	Inspection	None
Facilities	None	Storage	None
Tooling	None	Assembly	None
Material	None	Dismantle	None
		Disposal	None

APPLICATION

SIZE CODE
D 28020

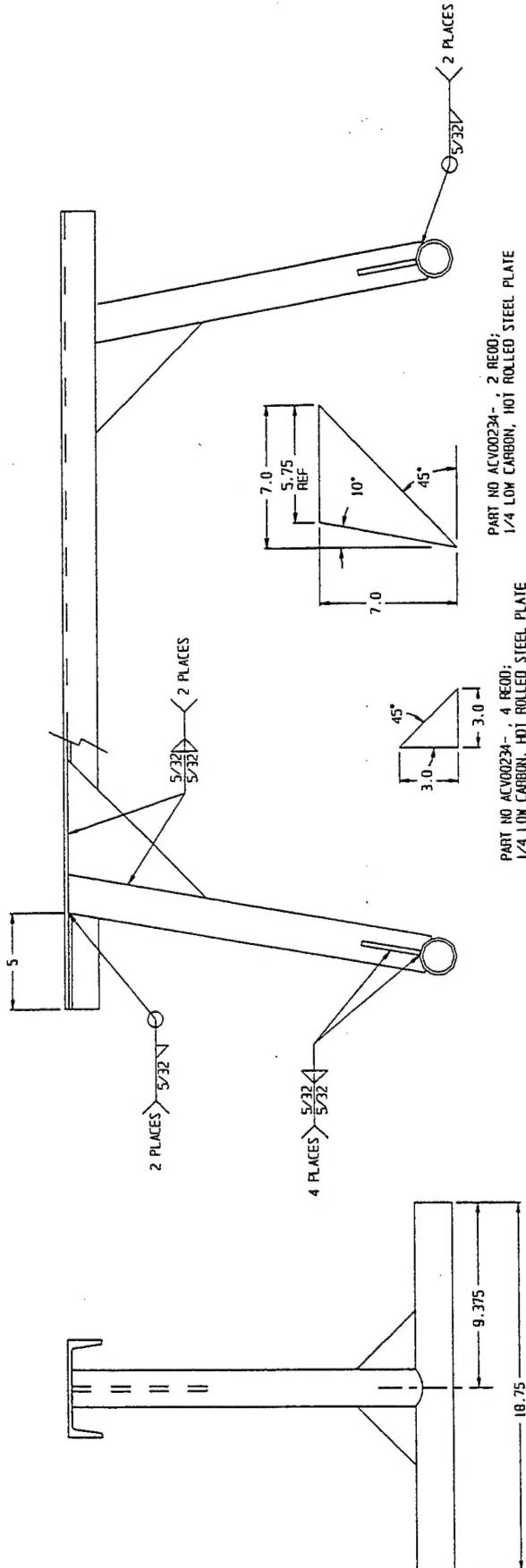
SCALE #/8

UNIT VI

STICK # 0F-1

DISTRIBUTION STATEMENT A, UNLIMITED

ITEM	DESCRIPTION	REVISION	DATE	APPROVED
-	PRODUCT BASELINE ERR 00000000	YY-MM-DD	YY-MM-DD	



PART NO ACV00234- 4' X 6000'.
1/4' LOW CARBON, HOT ROLLED STEEL PLATE
PART NO ALCO0224- 2 REED,
1/4' LOW CARBON, HOT ROLLED STEEL PLATE

CAO FILE
V234-3

ASSEMBLY PART NO. ACV000234-
TWO ASSEMBLIES REQUIRED FOR
SAFETY STAND

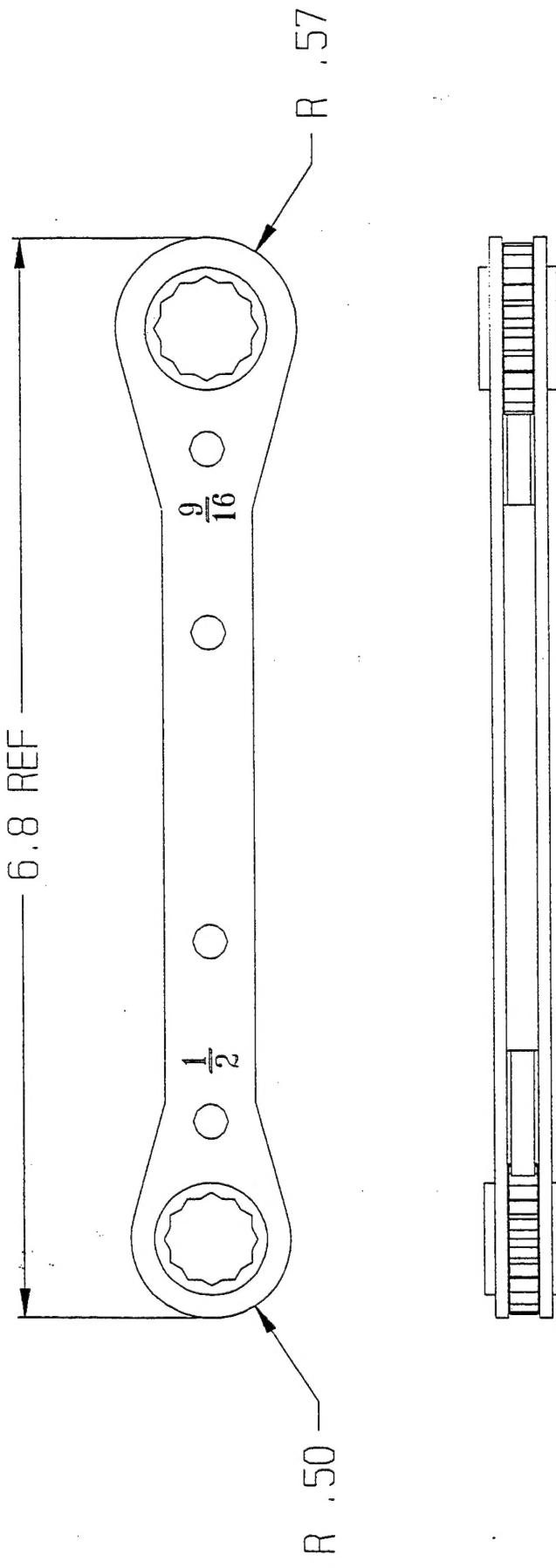
PART NO ACY00234-1 REOD;
4 INCH - 5.4 IBS/FI STRUCTURAL STEEL CHANNEL

18.75

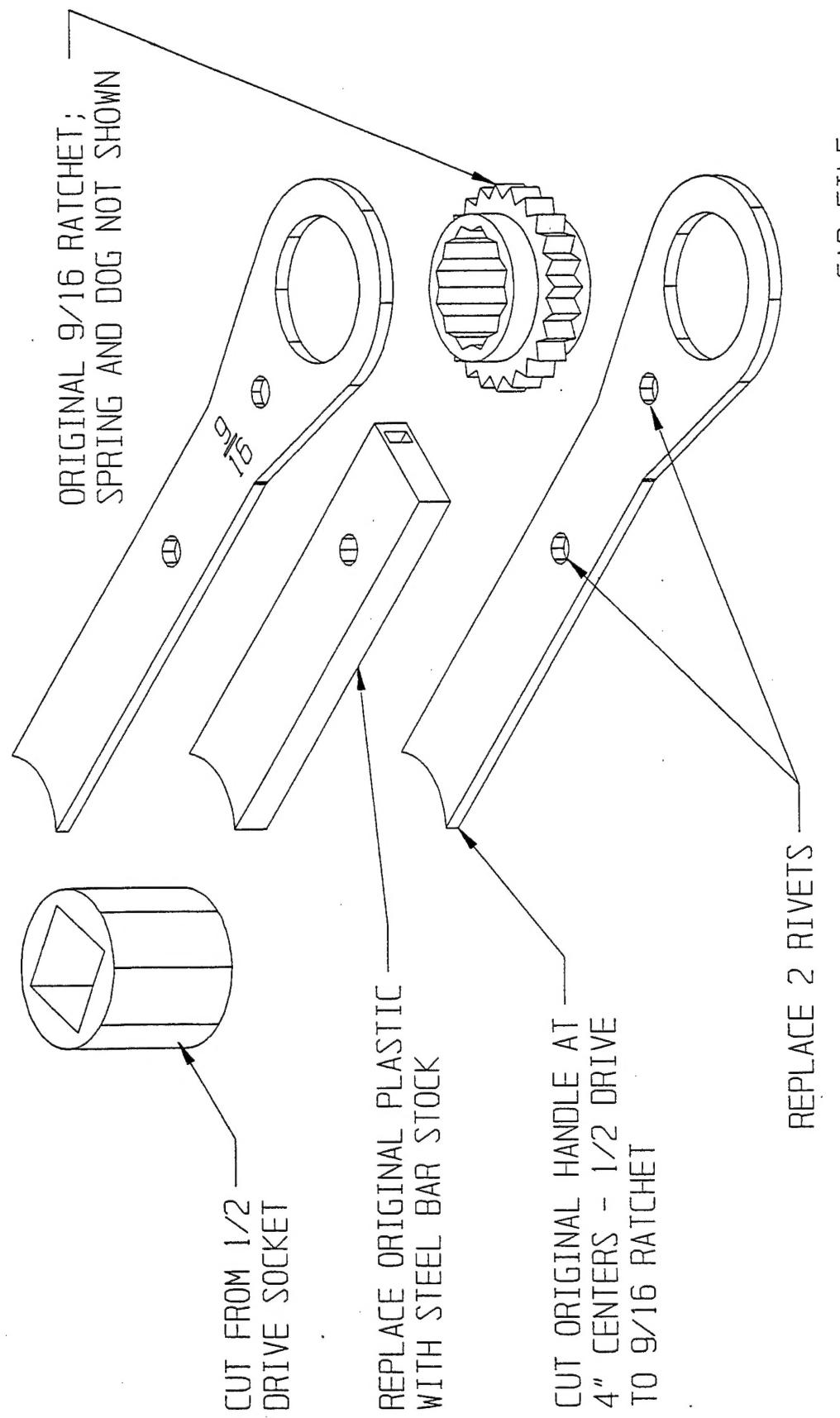
PART NO ACV00234- , 2 REOD; 1-1/2 SCH 40 PIPE

DISBURSEMENT STATEMENT A - UNLITED

1/2 X 9/16 STANDARD RATCHET BOX WRENCH
McMASTER-CARR PART NO 5461A33

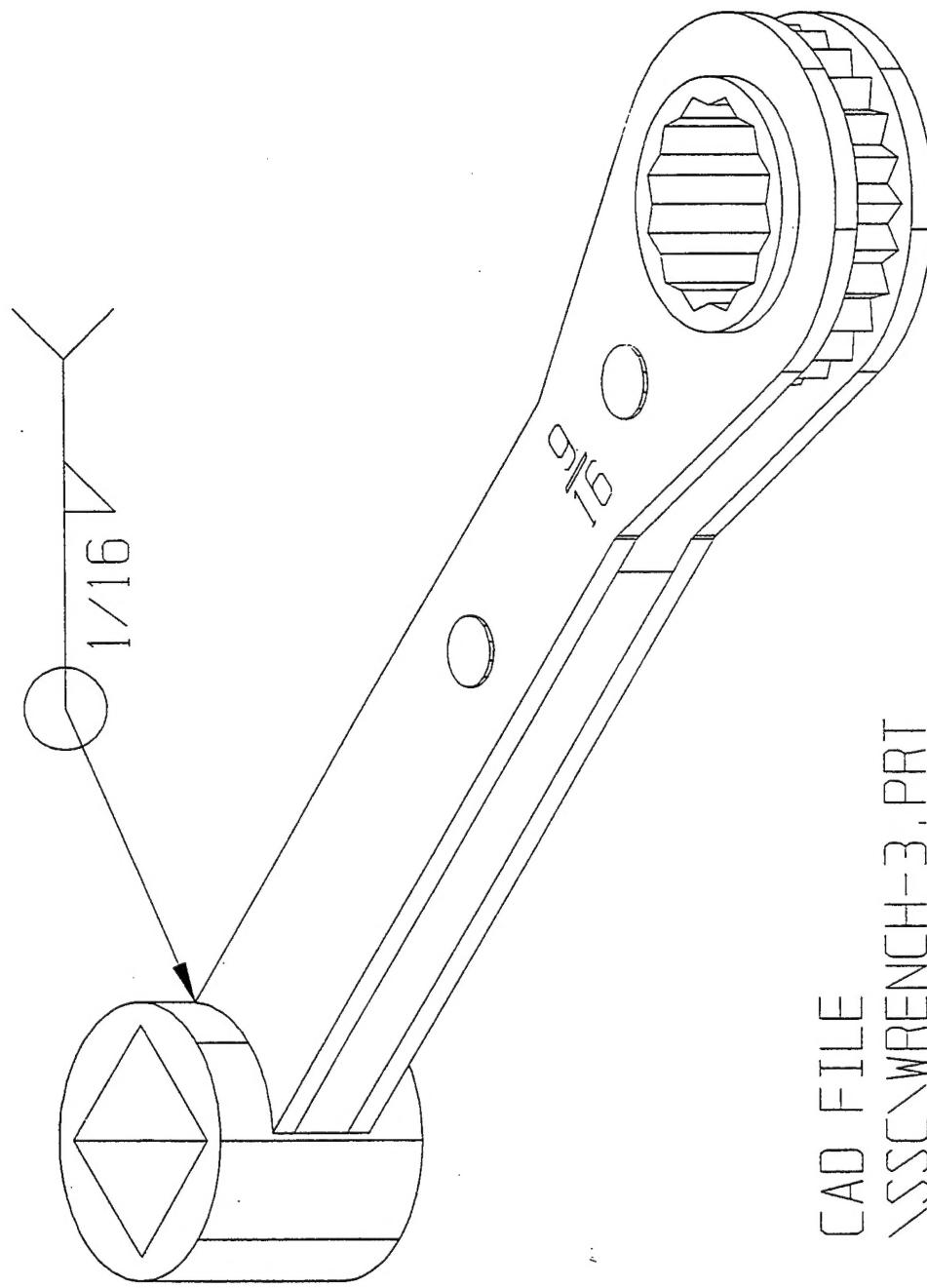


CAD FILE
\SSC\WRENCH-1.PRT



CAD FILE
\SSC\WRENCH-2.PRT

9/16 RATCHET BOX CROW-FOOT WRENCH, 1/2 DRIVE



CAD FILE
\\SSC\\WRENCH-3.PRT